1 Deep Drawn Metal Meter Box (MMB) for Single Phase Energy Meter.

1. SCOPE

This specification covers the design, manufacture, testing at manufacturer's place, pre-dispatch inspection and supply of MS sheet, Deep Drawn Metal Meter Box (MMBs. MMBs shall be used for housing Single phase energy meter for electric connections.

2. CONSTRUCTIONAL AND TECHNICAL PARTICULARS

2.1 The Deep Drawn Metal Meter Box (MMBs) shall conform to drawings attached. It shall be for housing Single Phase energy meter of any make. The internal dimensions of MMB shall be 285mmx200mmx150mm(i.e. height x width x depth).

2.2 The MMB shall be made from 20 SWG MS sheet by Deep Drawn Method. The base and cover of the MMB shall be individually in one piece without any welding except for fixing of the accessories like hinges, clamps, handle etc. which shall be spot-welded. The cover of MMB shall be fixed on two-tamper proof inside hinges not visible from outside. The hinge pin diameter should be 3mm. Hinges shall be made from 1.6mm MS sheet.The pin of hinges shall have head on top so that it does not fall down after wear & tear. The door of MMB shall open from right to left by minimum 90^0. The collar of the door (cover) in closed position shall rest on the collar of body (Base) of MMB. The collar of the door shall overlap the collar of the body of MMB by minimum 8mm. The collar of the body shall be provided with good quality rubber gasket lining of min. 3mm thickness. Thickness of rubber lining shall be such that it provides proper sealing between the cover & base of MMB to avoid penetration of dust & ingress of water. Rubber lining should be fixed with the best quality adhesive so that the same does not get removed by itself on opening of the door. Two numbers 'U' shaped latch arrangement shall be provided to Seal the cover with base as shown in the drawing. 2.5mm & 8mm diameter hole shall be provided in U-shaped latch for sealing wires & padlock. U-latch shall be joined with stainless steel rivet. Holes provided for sealing & padlock should be aligned when latch is in closed position. 'U' shaped latch arrangement shall be made from 1.6 mm thick MS sheet and shall be welded from inner side of the box.

2.3 A viewing window opening of the size 90mmx100mm as indicated in the drawing shall be provided about 40mm below top edge of MMB to facilitate taking of meter readings. Viewing window shall be provided with toughened glass of 5mm thickness. This glass shall be fixed from inside of the cover of MMB, with powder coated single piece drawn metal frame (Glass Holder) made of 20 SWG MS sheet fixed with min. four welded studs & nuts. Glass holder studs & nuts shall be inside the cover so that it can not be opened from outside. Glass holder shall have rectangular cuttings as per details shown indrawing. The size of toughened glass shall be 110mmx120mm. This glass has to be filled with a wrap around single piece rubber ring without joint having minimum depth of 8mm made from good quality rubber so that it can with stand weather effect.

2.4 A handle of minimum 70mm length and 10mm width and 20 SWG sheet thicknesses should be provided for opening and closing of the cover at the place as shown in the drawing.

2.5 The mounting arrangement of the meter shall be as shown in the drawing. It should be raised from the base of MMB body by 15mm (minimum). Zinc Plated adjustable strip shall be provided on meter mounting arrangement for fixing of the meter. The supplier shall supply three mounting MS screws, one for upper (M4 threads x length 12mm) & two (M4 threads x 25mm length) in moving slotted strip.

2.6 Two Nos. fixing holes of 6.5mm diameter at the back of surface of MMB shall be provided to fix the MMB at flat wall. For fixing of MMB on wall, 2 Nos. Plastic fixing plugs of 50mm length and 2 Nos. 5mm diameter 40mm long pan head self taping screws and washers shall be provided with every MMB.

2.7 2 Nos. holes with superior quality rubber cable glands shall be provided at the bottom of MMB. Glands shall be properly fixed such that the same does not get removed from the box. Internal diameter for incoming/outgoing gland shall be suitable for 2Cx10mm^2 Aluminum conductor PVC cable. Glands shall

be made such that internal diameter of glands provided for cables should be closed with the film of minimum 1mm thickness. Cable will go through the glands by piercing the film of the glands. Overlapping of glands from outer side should be approximately 5mm, such that the gland is not removed when cable is inserted inside the box.

2.8 Louvers for ventilation shall be provided on the sidewalls of the box as shown in drawing. 20SWG perforated sheet shall be welded from inside of the louvers.

2.9 MMB shall be adequately protected against rust, dust, water and corrosion both from inside and outside. The MMB shall have Light Admiralty Grey shade (IS-5:1993 Colour No. 697) on outside & inside. The MMB shall be powder coated. The surface of the MMB shall be properly pre-treated and cleaned in 7 tank process and shall be applied with a powder coating of about 40 micron thickness on outer side and inside. The facility for 7-Tank Phosphating & powder coating shall be in house of the tenderer / MMB manufacturer to ensure proper quality.

2.10 Earthing screw of diameter M6 threads with washer shall be provided in the threads of L-shape clamp welded to main body on left side. There should be no powder coating on earthing screws. Earth marking shall be duly embossed near the earth clamp.

2.11 All the screws, studs and washers shall be properly Zinc Plated. The tolerance permissible on the overall dimensions shall be (±) 3%. Danger marking shall be provided on the box in red color. Utility and Manufacturer name shall be provided on the door of meter box. Each box shall be supplied with proper packing in 3ply- corrugated box.

3. The box shall comply with the requirement of IP-33. The box shall be fully type tested along with dimensional drawing as per requirement of IS 13947 (Part-1):1993 and latest amendment, from the govt.-approved laboratories. Government approved laboratories should be accredited by the National Board of Testing & Calibration Laboratories (NABL) of Govt. of India. Test certificate (not older than 5 years) shall be submitted.

4. ACCEPTANCE TESTS:

Following acceptance tests shall be carried out at manufacturer's premises during the inspection of material before dispatch:

a) Visual Examination:

The MMB will be inspected visually, externally and internally for proper Powder Coating layer, fitting of all the components in accordance with technical Specification.

b) Verification of dimensions:

Verification of dimensions, external / internal clearances will be carried out as per technical specifications.

c) Verification of fittings:

Components like Glass, 'U' shaped latch arrangement, glands, clamps, hinges etc will be verified as per technical specification and usage requirement.

d) Painting:

Deep Drawn, 7-Tank Phosphating & Powder coating facilities shall be verified at the place of inspection.

2 Deep Drawn Metal Meter Box (MMB) for Three Phase Energy Meter

1. SCOPE

This specification covers the design, manufacture, testing at manufacturer's place, pre-dispatch inspection by Employer and supply of MS sheet, Deep Drawn Metal Meter Box (MMBs). MMBs shall be used for housing Three phase energy meter for electric connections of General category i.e. Domestic & Commercial connections.

2. CONSTRUCTIONAL AND TECHNICAL PARTICULARS

2.12 The Deep Drawn Metal Meter Box (MMBs) shall conform to drawings attached.It shall be for housing Three Phase energy meter of any make. The internal dimensions of MMB shall be 400mmx300mmx160mm(i.e. height x width x depth).

2.13 The MMB shall be made from 20 SWG MS sheet by Deep Drawn Method. The base and cover of the MMB shall be individually in one piece without any welding except for fixing of the accessories like hinges, clamps, handle etc. which shall be spot-welded. The cover of MMB shall be fixed on two-tamper proof inside hinges not visible from outside. The hinge pin diameter should be 3mm. Hinges shall be made from 1.6mm MS sheet.The pin of hinges shall have head on top so that it does not fall down after wear & tear. The door of MMB shall open from right to left by minimum 90^0. The collar of the door (cover) in closed position shall rest on the collar of body (Base) of MMB. The collar of the door shall overlap the collar of the body of MMB by minimum 8mm. The collar of the body shall be provided with good quality rubber gasket lining of min. 3mm thickness. Thickness of rubber lining shall be such that it provides proper sealing between the cover & base of MMB to avoid penetration of dust & ingress of water. Rubber lining should be fixed with the best quality adhesive so that the same does not get removed by itself on opening of the door. Two numbers 'U' shaped latch arrangement shall be provided to Seal the cover with base as shown in the drawing. 2.5mm & 8mm diameter hole shall be provided in U-shaped latch for sealing wires & padlock. U-latch shall be joined with stainless steel rivet. Holes provided for sealing & padlock should be aligned when latch is in closed position. 'U' shaped latch arrangement shall be made from 1.6 mm thick MS sheet and shall be welded from inner side of the box.

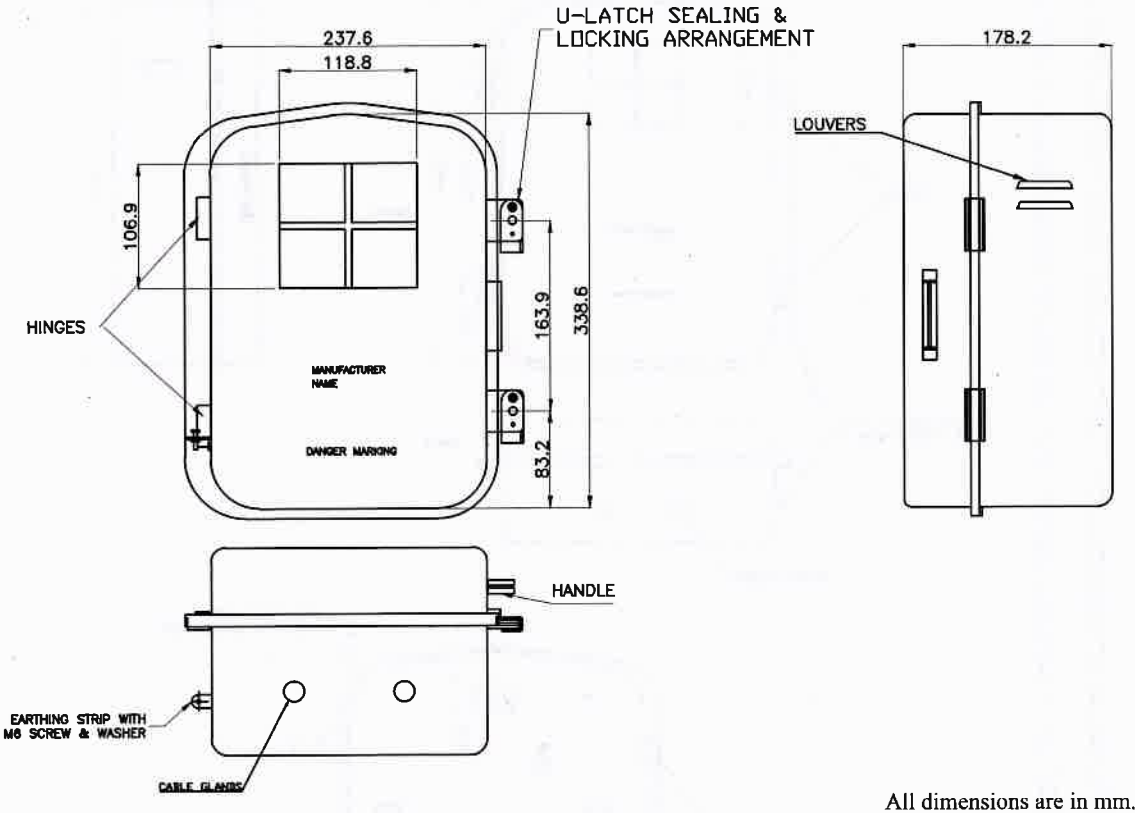
2.14 A viewing window opening of the size 90mmx100mm as indicated in the drawing shall be provided about 50mm below top edge of MMB to facilitate taking of meter readings. Viewing window shall be provided with toughened glass of 5mm thickness. This glass shall be fixed from inside of the cover of MMB, with powder coated single piece drawn metal frame (Glass Holder) made of 20 SWG MS sheet fixed with min. four welded studs & nuts. Glass holder studs & nuts shall be inside the cover so that it cannot be opened from outside. Glass holder shall have rectangular cuttings as per details shown in drawing. The size of toughened glass shall be 110mmx120mm. This glass has to be filled with a wraparound single piece rubber ring without joint having minimum depth of 8mm made from good quality rubber so that it can with stand weather effect.

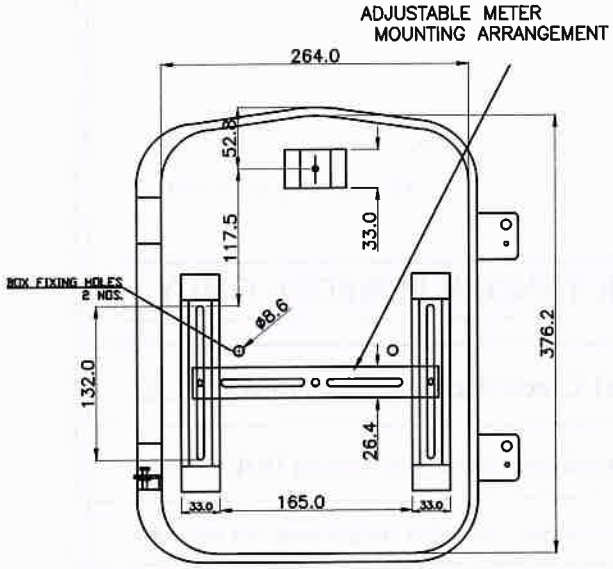
2.15 A handle of minimum 70mm length and 10mm width and 20 SWG sheet thicknesses should be provided for opening and closing of the cover at the place as shown in the drawing.

2.16 The mounting arrangement of the meter shall be as shown in the drawing. It should be raised from the base of MMB body by 15mm (minimum). Zinc Plated adjustable strip shall be provided on meter mounting arrangement for fixing of the meter. The supplier shall supply three mounting MS screws, one for upper (M4 threads x length 12mm) & two (M4 threads x 35mm length) in moving slotted strip.

2.17 Four Nos. fixing holes of 6.5mm diameter at the back of surface of MMB shall be provided to fix the MMB at flat wall. For fixing of MMB on wall, 4 Nos. Plastic fixing plugs of 50mm length and 4 Nos. 5mm diameter 40mm long pan head self-taping screws and washers shall be provided with every MMB.

2.18 2 Nos. holes with superior quality rubber cable glands shall be provided at the bottom of MMB. Glands shall be properly fixed such that the same does not get removed from the box. Internal diameter for incoming/outgoing gland shall be suitable for 4Cx25mm² Aluminum conductor PVC cable. Glands shall be made such that internal diameter of glands provided for cables should be closed with the film of





(INSIDE VIEW)

All dimensions are in mm.

FOR TENDER PURPOSE ONLY

R0					
REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT

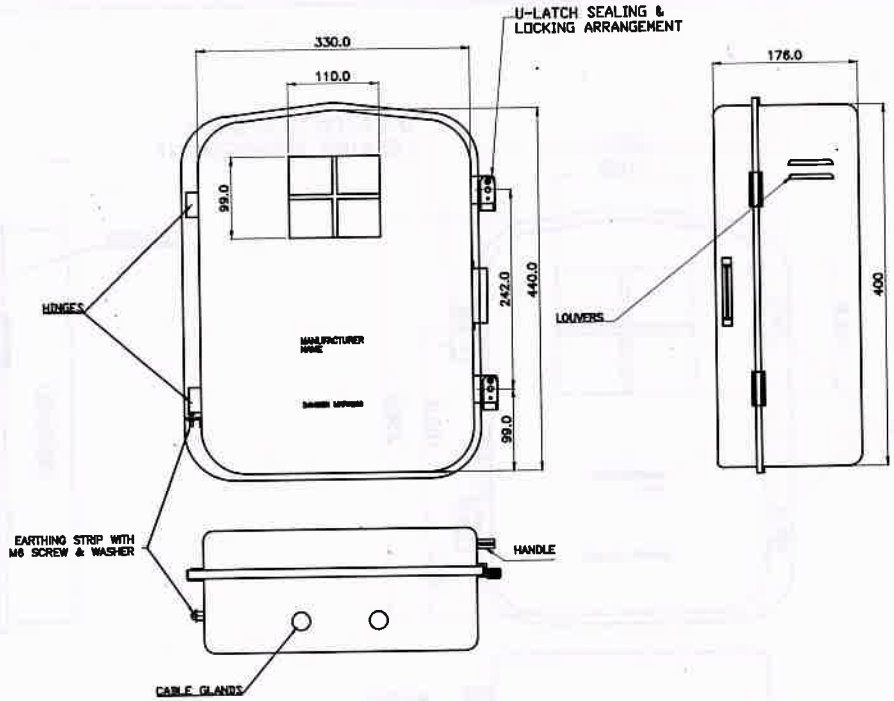
आरईसी REC

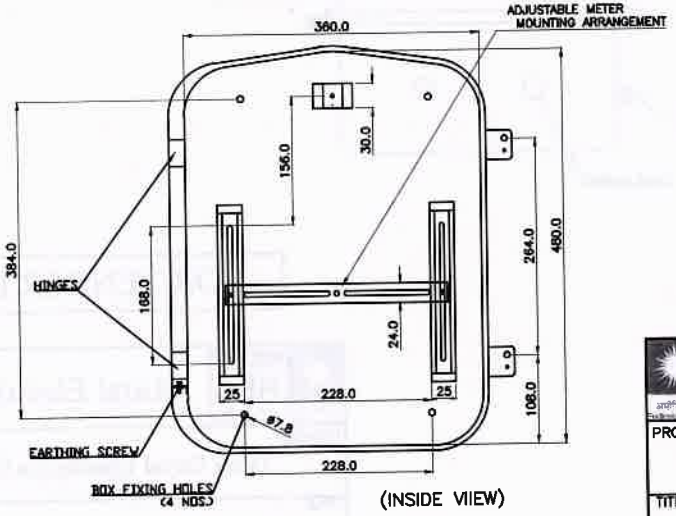
Rural Electrification Corporation Ltd.

PROJECT:
Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE
METAL METER BOX FOR SINGLE PHASE METER (DEEP DRAWN METHOD)

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/29	1 OF 1	0





(INSIDE VIIEW)

All dimensions are in MM.

FOR TENDER PURPOSE ONLY

आरईसी REC

Rural Electrification Corporation Ltd.

PROJECT:

Deen Dayal Upadhyaya Gram Jyoti Yojana(DDUGJY)

TITLE

METAL METER BOX FOR THREE PHASE METER (DEEP DRAWN METHOD)

REV. NO.	PREPARED BY	CHECKED BY	APPROVED BY	DATE	PROJECT
R0					

SIZE	SCALE	DRG. NO.	SHT. NO.	REV. NO.
A3	NTS	REC/DDUGJY/DTR SS/30	1 OF 1	0